

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 10/553,639
(Attorney Docket No. Q90948)

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A cosmid vector comprising:
 - (1) an adenoviral genome having a left-inverted terminal repeat and a right-inverted terminal repeat, each of said repeats has having a complete nucleotide sequence,
 - (2) a deletion in an adenovirus E1 gene region, wherein the E1 gene deletion site comprises a restriction enzyme recognition sequence wherein a foreign gene is inserted for inserting a foreign gene into the E1 gene deletion site,
 - (3) a first pair of identical restriction enzyme recognition sequences, wherein said first pair of sequences are not naturally not present in the adenoviral genome, on both sides of the adenoviral genome, one of said sequences in the first pair is located on the left side of the left-inverted terminal repeat and the other of said sequences in the first pair is located on the right side of the right-inverted terminal repeat;
 - (4) a drug resistant gene, a replication origin, a spacer sequence and a COS region in this order from outside of the left-inverted terminal repeat sequence toward the right inverted terminal repeat sequence,
 - (5) a second pair of identical restriction enzyme recognition sequences, wherein one of said sequences in the second pair is located inside which is present (i) within the E1 gene deletion site and (ii) at a right side of the restriction enzyme recognition sequence in (2) a foreign gene insertion site, within the right side is IVa2 gene side, and the other of said sequences in the

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

second pair is present inside the spacer sequence, and.

(6) — said cosmid vector being suitable for constructing, by being acted by a restriction enzyme recognizing the second pair of identical restriction enzyme recognition sequences, a plasmid in which a major part of the adenoviral genome, the spacer region and the COS region are removed, while a foreign gene inserted at the foreign gene insertion site present in the E1 gene deletion site is maintained.

2-4. (cancelled).

5. (previously presented) The cosmid vector according to claim 1, comprising the sequence TTCTGAA, which can be recognized by at least Csp45I, BspT104I or BstBI, as a restriction enzyme recognition sequence present on both sides of the adenoviral genome.

6-7. (cancelled).

8. (currently amended) The cosmid vector according to claim 1, wherein the restriction enzyme recognition sequence for inserting a foreign gene contained in the E1 gene deletion site is a SwaI recognition sequence.

9. (previously presented) The cosmid vector according to claim 1, wherein the cosmid vector further comprising a CAG promoter or an EF-1 α promoter in the E1 gene deletion site.

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

10. (withdrawn-Previously presented) A method of generating a recombinant adenoviral vector characterized by comprising digesting the cosmid vector according to claim 1 with a restriction enzyme and transforming a cell with the cosmid vector.

11. (withdrawn) The method of generating a recombinant adenoviral vector according to claim 10, characterized in that the restriction enzyme is Csp45I, BspT104I or BstBI.

12. (Previously presented) A composition for generating a recombinant adenoviral vector comprising the cosmid vector according to claim 1 as a component, in an admixture with a suitable diluent.

13. (withdrawn) A cosmid vector or plasmid vector characterized by:

- (1) containing an adenoviral genome having adenoviral inverted terminal repeat sequences each having a complete nucleotide sequence,
- (2) having a deletion in an adenovirus E1 gene region, and
- (3) containing multiple kinds of restriction enzyme recognition sequences not present in the adenoviral genome, on both sides of the adenoviral genome.

14. (withdrawn) The vector according to claim 13, comprising, on both sides of the adenoviral genome, at least two kinds of restriction enzyme recognition sequences selected from

- (a) TTTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI,

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

- (b) TTAATTAA recognized by a restriction enzyme PacI, and
- (c) ATCGAT recognized by a restriction enzyme Clal or BspDI.

15. (withdrawn) The vector according to claim 14, comprising at least

- (a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, and
- (b) TTAATTAA recognized by a restriction enzyme PacI.

16. (withdrawn) The vector according to claim 14, comprising at least

- (a) TTCGAA recognized by a restriction enzyme of Csp45I, BspT104I, or BstBI, and
- (c) ATCGAT recognized by a restriction enzyme Clal or BspDI.

17. (withdrawn) The vector according to claim 13, comprising two kinds of restriction enzyme recognition sequences not present in the adenoviral genome on both sides of the adenoviral genome.

18. (withdrawn) The vector according to claim 17, comprising two kinds of restriction enzyme recognition sequences selected from

- (a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI,
- (b) TTAATTAA recognized by a restriction enzyme PacI, and
- (c) ATCGAT recognized by a restriction enzyme Clal or BspDI.

19. (withdrawn) The vector according to claim 18, comprising

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

- (a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, and
- (b) TTAATTAA recognized by a restriction enzyme PacI.

20. (withdrawn) The vector according to claim 18, comprising

- (a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, and
- (c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

21. (withdrawn) The vector according to claim 13, comprising three kinds of restriction enzyme recognition sequences not present in the adenoviral genome, on both sides of the adenoviral genome.

22. (withdrawn) The vector according to claim 21, comprising three kinds of restriction enzyme recognition sequences

- (a) TTCGAA recognized by a restriction enzyme of Csp45I, BspT104I, or BstBI,
- (b) TTAATTAA recognized by a restriction enzyme PacI, and
- (c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

23. (withdrawn) The vector according to claim 13, comprising a nucleotide sequence recognized by a restriction enzyme, for inserting a foreign gene into an E1 gene deletion site.

24. (withdrawn) The vector according to claim 23, characterized in that the

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

restriction enzyme is *Swa*I.

25. (withdrawn-Previously presented) The vector according to claim 23, further comprising a CAG promoter or an EF-1 α promoter in the E1 gene deletion site.

26. (withdrawn-Previously presented) The vector according to claim 13, characterized in that the vector is a cosmid vector.

27. (withdrawn-Previously presented) A method of generating a recombinant adenoviral vector characterized by comprising digesting the vector according to claim 13 with a restriction enzyme and transforming a cell with the vector.

28. (withdrawn) The method of generating a recombinant adenoviral vector according to claim 27, characterized in that the restriction enzyme is *Csp*45I, *Bsp*T104I, or *Bst*BI.

29. (withdrawn) The method of generating a recombinant adenoviral vector according to claim 27, characterized in that the restriction enzyme is *Pac*I.

30. (withdrawn) The method of generating a recombinant adenoviral vector according to claim 27, characterized in that the restriction enzyme is *Cl*I or *Bsp*DI.

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

31. (withdrawn-Previously presented) A reagent for generating a recombinant adenoviral vector, comprising the vector according to claim 13, as a component.

32. (currently amended) The cosmic vector according to claim 1, wherein the second pair of restriction enzyme recognition sequences ~~is-are~~ SalI recognition sequence or NruI recognition sequence.

33. (currently amended) The cosmid vector according to claim 1, comprising at least two pairs of identical restriction enzyme recognition ~~sequence-sequences~~ which ~~is-are~~ not present in the adenoviral genome and exist on both sides of the adenoviral genome.

34. (previously presented) The cosmid vector according to claim 33, wherein the two pairs of identical restriction enzyme recognition sequences are selected from the group consisting of (a) TTTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, (b) TTAATTAA recognized by a restriction enzyme PacI, and (c) ATCGAT recognized by a restriction enzyme C1aI or BspDI.

35. (previously presented) The cosmid vector according to claim 34, wherein the two pairs of identical restriction enzyme recognition sequences are (a) TTTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, or (b) TTAATTAA recognized by a restriction enzyme PacI.

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Appln. No. 10/553,639

(Attorney Docket No. Q90948)

36. (previously presented) The cosmid vector according to claim 34, wherein the two pairs of identical restriction enzyme recognition sequences are (a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, or (c) ATCGAT recognized by a restriction enzyme C1aI or BspDI.

37. (new) The cosmid vector according to claim 1, wherein the vector does not comprise additional restriction enzyme recognition sequences which are identical to the second pair of identical restriction enzyme recognition sequences, in a region containing one of the sequences in the second pair located inside the E1 gene deletion site, the drug resistance gene, the replication origin and the other of the sequences in the second pair located inside the spacer sequence.